

Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: INVUE

Report Number: P368429

Luminaire Tested: **MSA-SA4B-830-U-SL2-HSS**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368429  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-17)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA4B-830-U-SL2-HSS  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12654 lumens  
Efficiency: N/A  
Efficacy: 74.0 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short  
BUG Rating: B2 - U0 - G2

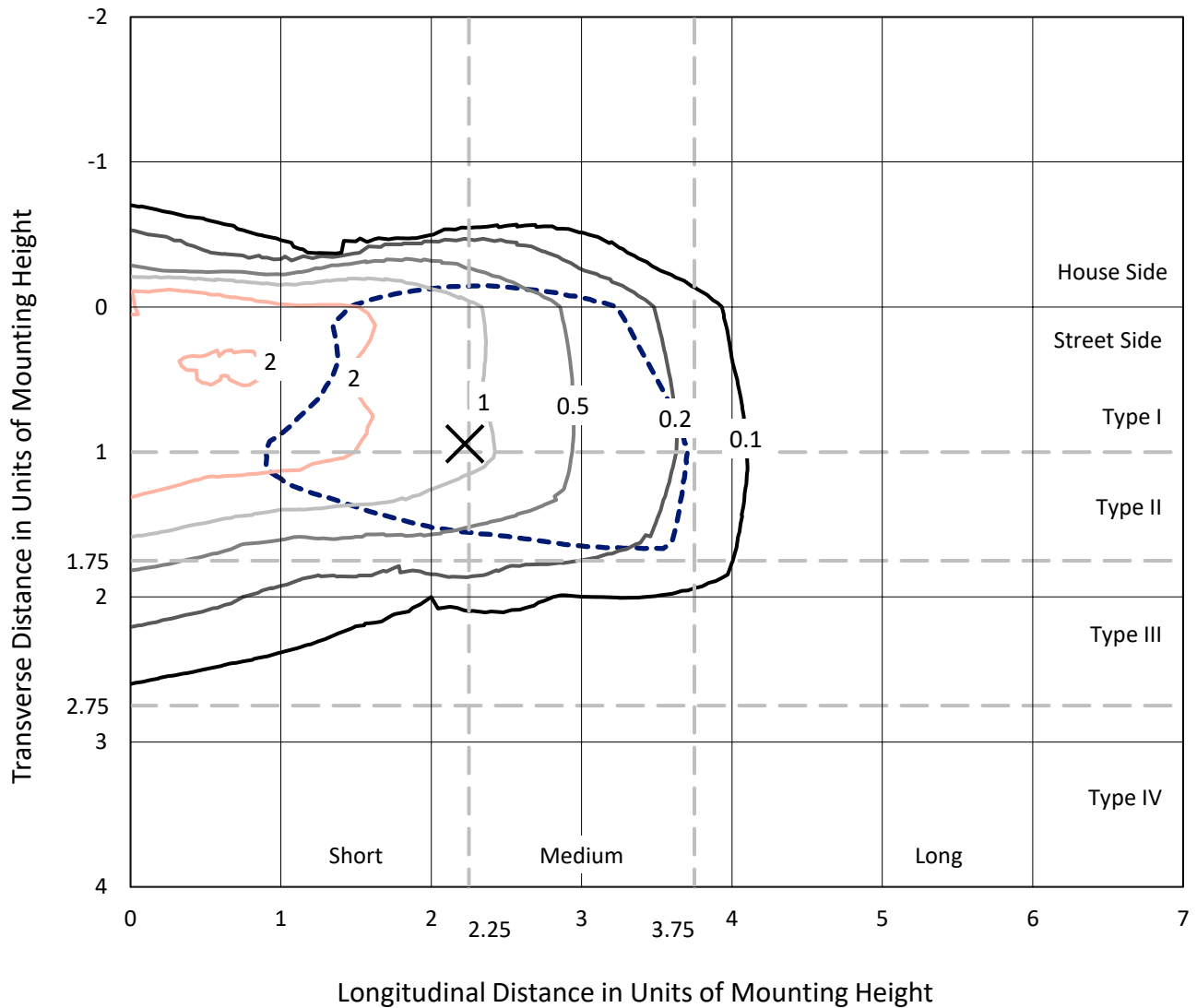
Input Watts (W): 171  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

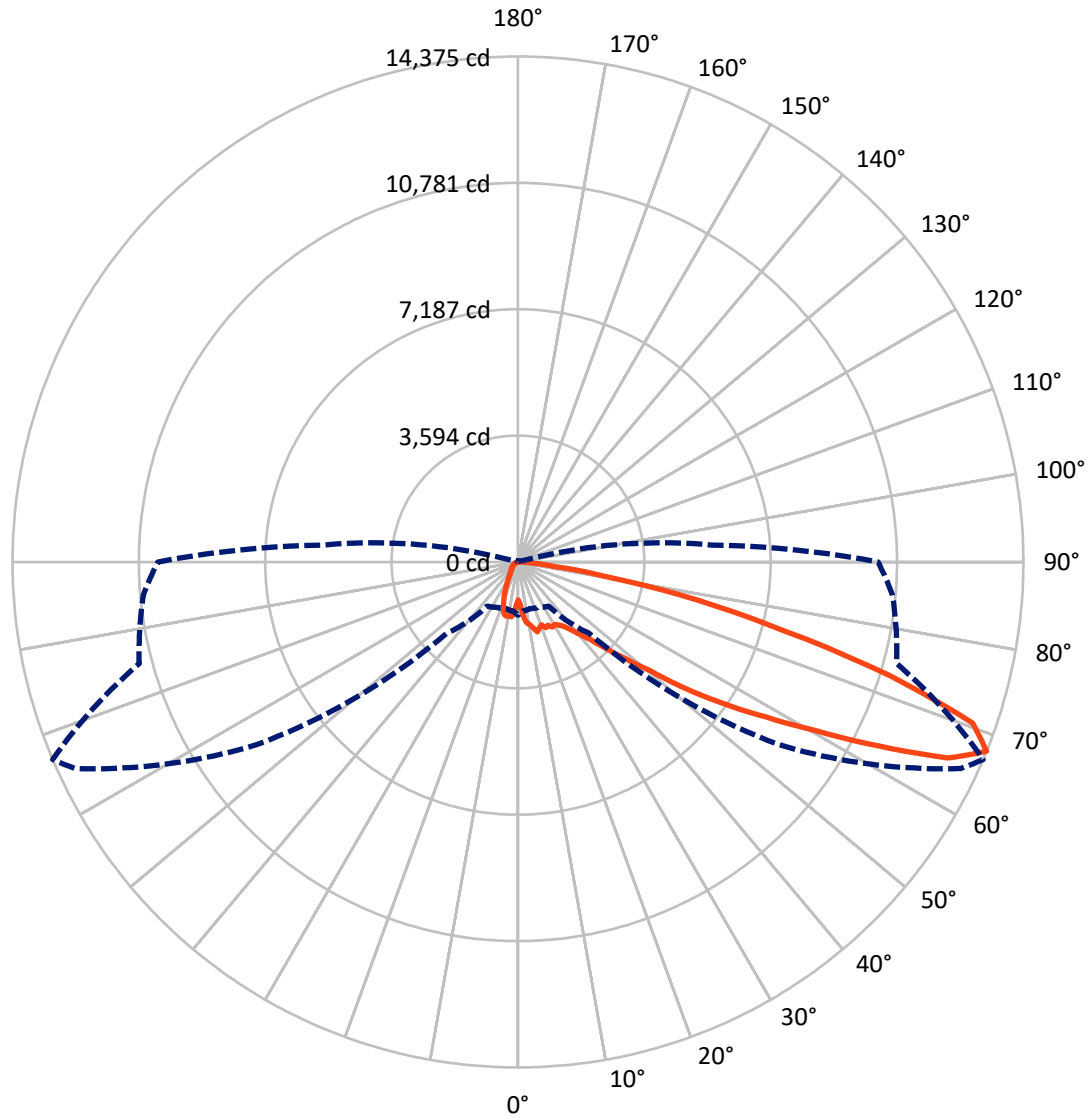
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.3 fc  
 Type II - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 67-Deg Lateral      - - - Horizontal Cone Through 67.5-Deg Vertical

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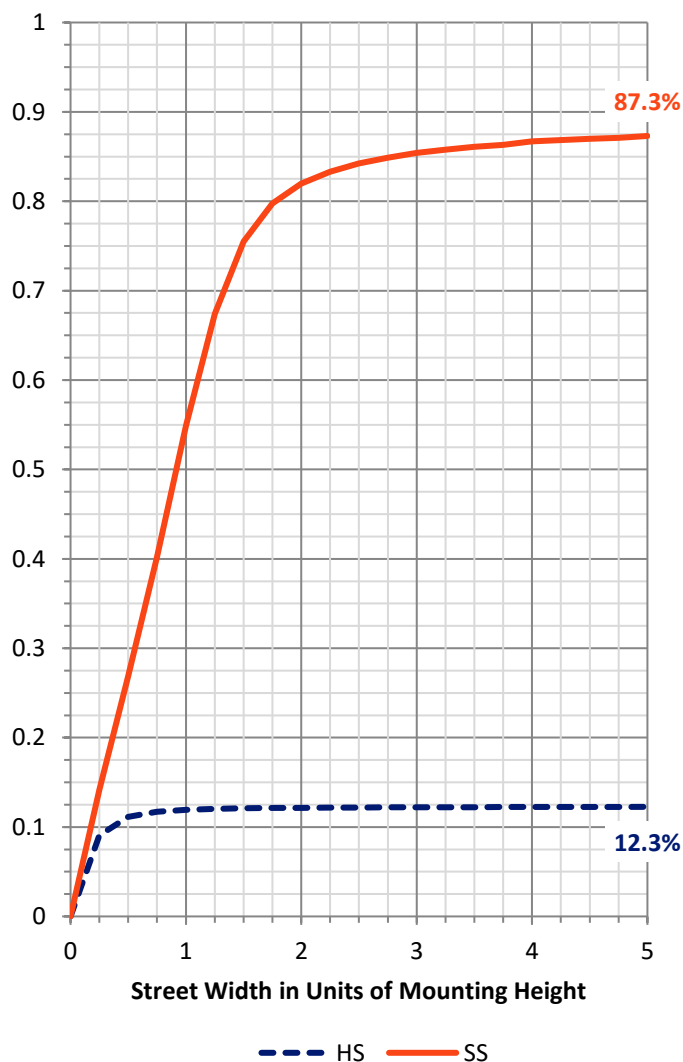
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1564.9	0.0	1564.9
	% Fixture	12.4	0.0	12.4
<b>Street Side</b>	Lumens	11089.1	0.0	11089.1
	% Fixture	87.6	0.0	87.6
<b>Total</b>	Lumens	12654.0	0.0	12654.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	135.3	1.1
10°-20°	400.3	3.2
20°-30°	627.3	5.0
30°-40°	1011.5	8.0
40°-50°	1858.7	14.7
50°-60°	3139.1	24.8
60°-70°	3470.4	27.4
70°-80°	1816.4	14.4
80°-90°	195.1	1.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	12654.0	100.0
0°-180°	12654.0	100.0

**Coefficient of Utilization**

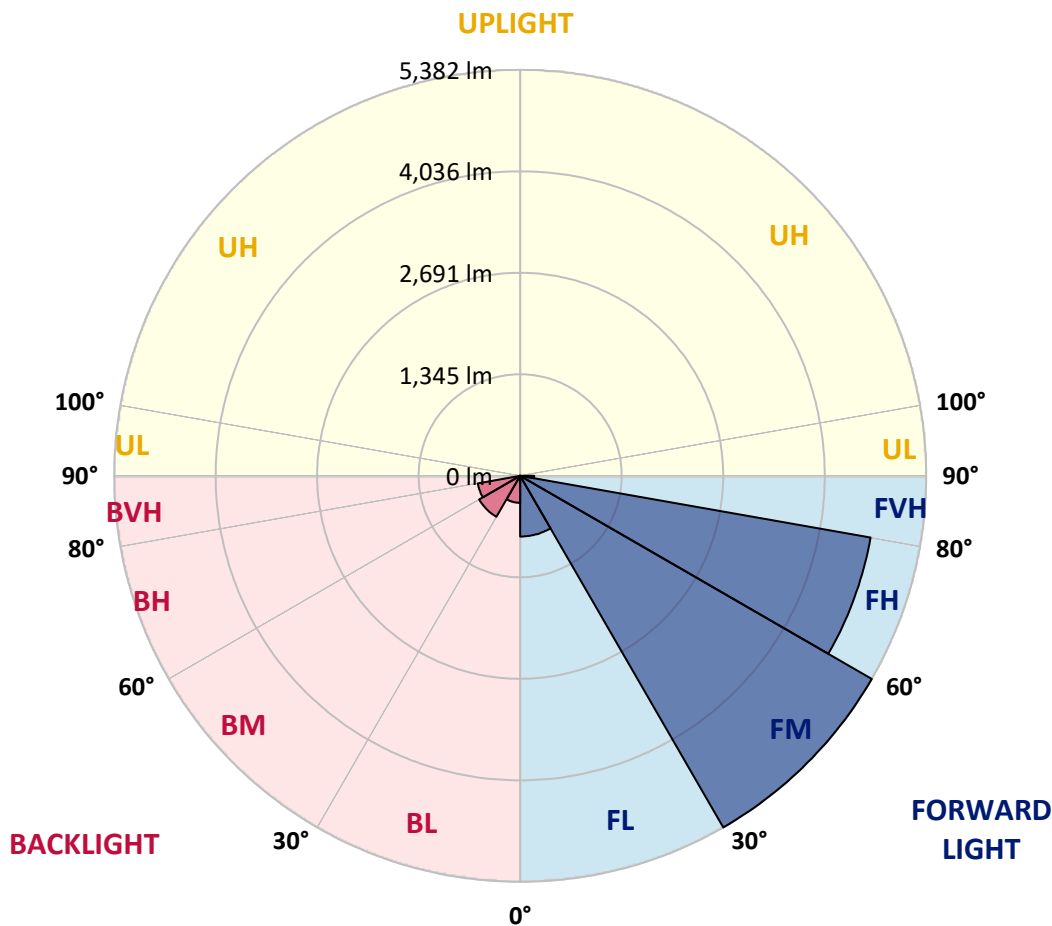


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	804.6	6.4			
FM (30°-60°)	5381.8	42.5			
FH (60°-80°)	4715.9	37.3			G2/5000
FVH (80°-90°)	186.7	1.5			G2/225
BL (0°-30°)	358.3	2.8	B1/500		
BM (30°-60°)	627.5	5.0	B1/1000		
BH (60°-80°)	570.8	4.5	B2/1000		G2/1000
BVH (80°-90°)	8.3	0.1			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G2**  
 Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	67°	75°	85°
0°	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8
2.5°	1272.3	1229.3	1156.1	1177.3	1219.6	1254.9	1238.2	1205.5	1206.1	1172.8	1292.8
5°	1480.2	1422.5	1380.1	1394.9	1392.9	1391.7	1470.6	1500.8	1513.6	1568.8	1650.3
7.5°	1539.9	1519.4	1475.1	1488.6	1444.3	1447.5	1586.2	1717.1	1737.6	1771.7	1916.7
10°	1516.8	1477.0	1493.1	1493.1	1493.7	1565.6	1658.7	1783.9	1808.9	1939.9	1955.3
12.5°	1491.8	1493.7	1557.3	1545.7	1633.0	1762.0	1793.5	1934.1	1921.9	2035.5	2204.3
15°	1584.9	1633.7	1592.6	1608.6	1617.0	1768.5	1819.2	2006.0	2059.9	2203.7	2313.4
17.5°	1744.7	1751.1	1665.8	1642.6	1703.0	1746.0	1848.1	1937.9	1973.9	2351.3	2506.7
20°	1773.6	1814.7	1728.0	1594.5	1722.2	1781.3	1852.6	1895.6	1911.0	2396.9	2615.8
22.5°	1947.6	1902.0	1763.3	1661.9	1698.5	1762.7	1807.0	1936.6	2029.1	2310.9	2720.4
25°	2036.8	2024.6	1892.3	1805.7	1768.5	1763.3	1864.7	1963.0	1992.5	2400.1	2746.1
27.5°	2250.5	2222.9	1966.8	1955.9	1833.3	1725.5	1866.7	2043.2	2098.4	2316.0	2842.4
30°	2541.3	2531.0	2190.2	2183.1	1988.0	1794.1	1970.7	2092.6	2059.2	2359.0	2906.6
32.5°	2834.0	2917.5	2568.9	2369.9	2223.6	2046.4	1941.1	2077.2	2136.9	2463.6	3024.7
35°	3187.7	3248.1	2893.1	2748.7	2423.2	2164.5	2136.9	2224.2	2249.9	2588.2	3158.8
37.5°	3806.5	3715.4	3413.0	3167.2	2996.4	2586.3	2450.2	2380.8	2440.5	2757.0	3432.9
40°	4263.6	4205.8	3833.5	3686.5	3293.6	3053.6	2697.9	2633.1	2699.9	2930.3	3623.6
42.5°	4815.0	4694.9	4344.4	4244.9	3840.5	3377.7	3017.0	3039.4	2997.7	3272.5	3958.0
45°	5313.7	5042.8	4847.7	4870.2	4654.5	4029.3	3549.1	3538.2	3503.5	3768.0	4309.8
47.5°	5649.4	5412.6	5222.6	5160.3	5134.6	5175.1	4318.1	4124.3	4098.6	4288.6	4863.7
50°	5829.8	5570.5	5335.6	5348.4	5869.6	6261.8	5111.5	4836.1	4845.8	5044.1	5621.2
52.5°	5708.5	5415.1	5167.4	5408.1	6439.6	6986.5	6424.9	5766.3	5989.7	5938.9	6637.3
55°	5148.1	4893.3	4717.4	5148.1	6501.9	7766.5	8041.8	7166.3	7116.2	7000.7	7673.4
57.5°	4205.1	3985.6	3877.1	4331.6	5820.8	8394.9	9665.9	8748.6	8321.7	7837.7	8533.5
60°	3133.2	2971.4	2858.4	3098.5	4586.4	7784.4	10729.5	10239.7	9745.5	8644.6	9306.4
62.5°	2320.5	2188.9	2068.9	2090.7	3158.2	6695.1	11137.8	11819.5	11535.8	9496.4	10035.6
65°	1851.9	1731.9	1647.8	1599.6	1955.9	5037.1	10569.7	13114.2	13441.6	10298.8	10562.0
67.5°	1512.3	1410.9	1369.2	1424.4	1534.2	2871.3	9052.2	13899.9	14374.9	11150.0	10691.6
70°	1230.5	1147.1	1142.6	1291.5	1412.8	1750.5	6658.5	13357.5	13715.0	11295.0	9914.3
72.5°	857.6	821.0	879.4	1090.6	1400.0	1457.8	3823.9	11053.7	11066.5	9975.9	8154.8
75°	485.3	479.5	571.9	869.8	1363.4	1443.0	2131.8	7811.4	7817.2	7545.0	5649.4
77.5°	267.0	249.7	333.2	588.0	1170.8	1409.6	1375.0	5333.6	5196.9	4198.7	2580.5
80°	123.2	116.2	180.4	376.8	856.3	1333.2	1102.2	2931.6	2643.4	1367.9	629.7
82.5°	50.7	48.1	82.8	242.0	541.1	1073.9	928.8	1300.5	1043.7	260.0	194.5
85°	9.0	9.6	34.0	146.4	303.0	494.9	753.0	617.5	453.8	71.9	106.6
87.5°	0.0	0.0	7.1	35.3	73.2	135.4	305.5	172.7	118.8	21.2	31.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8	1077.8
2.5°	1316.6	1305.6	1195.2	1200.4	1208.1	1201.0	1199.7	1168.9	1140.7	1233.7	1232.5
5°	1665.1	1587.4	1511.1	1481.5	1418.0	1334.5	1335.2	1308.9	1281.9	1319.8	1319.8
7.5°	1913.5	1806.3	1709.4	1536.7	1368.6	1216.4	1202.9	1167.0	1125.9	1175.3	1185.0
10°	1971.3	1878.2	1753.1	1499.5	1340.3	1192.0	1029.0	894.8	832.6	803.7	798.5
12.5°	2149.1	2079.8	1799.9	1519.4	1290.2	1039.3	772.2	613.0	504.5	496.2	484.6
15°	2267.9	2219.1	1846.1	1470.0	1078.4	747.2	485.3	372.3	328.7	324.8	319.0
17.5°	2452.1	2367.4	1801.8	1312.7	843.5	493.0	326.1	294.0	299.1	310.7	301.7
20°	2527.2	2361.6	1705.6	1084.8	592.5	330.6	283.1	265.8	279.2	290.1	285.0
22.5°	2604.2	2378.3	1620.2	894.2	387.1	273.5	252.3	243.3	244.6	255.5	256.1
25°	2603.6	2424.5	1521.3	696.5	288.2	243.3	227.9	216.3	211.8	219.5	217.6
27.5°	2730.0	2371.2	1340.9	516.7	253.6	217.6	202.8	188.7	172.7	180.4	180.4
30°	2730.7	2457.9	1215.1	371.0	232.4	193.9	181.0	159.2	140.6	147.0	147.6
32.5°	2803.2	2382.8	1098.9	283.7	215.7	179.7	151.5	131.6	120.7	124.5	124.5
35°	2886.0	2447.0	920.5	250.3	199.0	159.8	129.7	113.6	105.3	108.5	108.5
37.5°	3159.5	2433.5	796.6	233.0	188.1	144.4	118.1	100.1	96.3	98.2	100.8
40°	3258.3	2529.1	628.4	222.7	170.1	130.3	104.0	90.5	85.4	86.7	87.3
42.5°	3510.0	2550.3	502.0	214.4	154.1	113.0	92.4	82.8	76.4	76.4	78.3
45°	3787.9	2603.6	399.3	207.3	140.6	101.4	83.4	75.7	66.1	64.8	67.4
47.5°	4190.4	2807.7	325.4	193.2	124.5	94.4	77.0	65.5	57.8	55.2	57.8
50°	4863.7	3154.3	287.6	175.9	113.0	88.6	68.0	55.8	50.1	46.9	48.8
52.5°	5813.8	3753.2	267.7	159.8	102.7	79.6	61.0	48.8	43.0	40.4	41.7
55°	6869.1	4440.1	258.0	143.8	93.7	70.0	53.3	43.0	37.9	34.7	35.3
57.5°	7844.8	5085.8	248.4	128.4	84.7	62.3	46.9	37.9	32.7	29.5	30.2
60°	8806.4	5601.3	225.3	110.4	76.4	55.8	41.1	32.7	29.5	25.7	25.7
62.5°	9656.9	5909.4	191.9	95.6	68.7	49.4	36.6	29.5	27.0	23.1	23.1
65°	10235.9	5923.5	154.7	82.2	60.3	42.4	32.1	27.6	25.0	20.5	19.9
67.5°	10244.2	5538.4	123.9	73.2	53.3	37.2	28.9	26.3	23.1	19.3	18.0
70°	9169.0	4575.5	103.3	64.2	46.2	32.7	25.0	25.0	22.5	18.6	16.7
72.5°	7334.5	3496.5	86.7	55.8	41.1	28.2	23.1	23.8	21.8	18.6	16.7
75°	4929.9	2005.3	71.9	47.5	35.9	23.8	22.5	23.1	22.5	18.6	16.0
77.5°	2270.4	638.7	55.8	39.2	30.8	19.9	21.8	21.8	20.5	16.7	14.1
80°	511.6	157.3	40.4	28.9	25.0	14.8	19.9	18.0	16.0	11.6	8.3
82.5°	186.2	48.1	24.4	18.0	15.4	5.8	12.8	12.8	11.6	8.3	5.1
85°	106.6	25.0	13.5	11.6	8.3	2.6	7.1	7.7	6.4	5.8	2.6
87.5°	34.7	5.8	6.4	7.1	6.4	1.3	2.6	2.6	1.9	1.3	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)